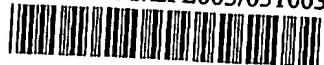


539622

PCT/EP2003/051003



Translation

**PATENT COOPERATION TREATY  
PCT  
INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference  62965	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No.  PCT/EP2003/051003	International filing date (day/month/year)  15 décembre 2003 (15.12.2003)	Priority date (day/month/year)  17 décembre 2002 (17.12.2002)
International Patent Classification (IPC) or national classification and IPC  H04L 27/26		
Applicant  THALES		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand  05 juillet 2004 (05.07.2004)	Date of completion of this report  02 September 2005 (02.09.2005)
Name and mailing address of the IPEA/EP  Facsimile No.	Authorized officer  Telephone No.

Form PCT/IPEA/409 (cover sheet) (July 1998)

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/051003

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

the international application as originally filed

the description:

pages \_\_\_\_\_ 1-9 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ , filed with the demand

the claims:

pages \_\_\_\_\_ 1-15 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ , as amended (together with any statement under Article 19)  
 pages \_\_\_\_\_ , filed with the demand  
 pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

the drawings:

pages \_\_\_\_\_ 1/3-3/3 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ , filed with the demand  
 pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

the sequence listing part of the description:

pages \_\_\_\_\_ , as originally filed  
 pages \_\_\_\_\_ , filed with the demand  
 pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:


the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).  
 the language of publication of the international application (under Rule 48.3(b)).  
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_
- the claims, Nos. \_\_\_\_\_
- the drawings, sheets/fig. \_\_\_\_\_

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/EP 03/51003

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>3, 4, 6, 7, 10-15</u>	YES
	Claims	<u>1, 2, 5, 8, 9</u>	NO
Inventive step (IS)	Claims	<u>3, 4</u>	YES
	Claims	<u>1, 2, 5-15</u>	NO
Industrial applicability (IA)	Claims	<u>1-15</u>	YES
	Claims		NO

2. Citations and explanations

1. Documents

1.1 Reference is made to the following documents cited in the search report:

D1: WO 00/31939 A (VAEAENAENEN JANNE; LAAMANEN HEIKKI (F1); TELLABS OY (F1)) 2 June 2000 (2000-06-02)  
D2: GB-A-2 271 693 (MOTOROLA ISRAEL LTD) 20 April 1994 (1994-04-20)

D3: WONG C Y ET AL: 'MULTIUSER OFDM WITH ADAPTIVE SUBCARRIER, BIT, AND POWER ALLOCATION' IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, IEEE INC. NEW YORK, US, vol. 17, no. 10, October 1999 (1999-10), pages 1747-1758, XP000854075  
ISSN: 0733-8716

D4: LASSALLE R ET AL: 'PRINCIPLES OF MODULATION AND CHANNEL CODING FOR DIGITAL BROADCASTING FOR MOBILE RECEIVERS' EBU REVIEW- TECHNICAL, EUROPEAN BROADCASTING UNION. BRUSSELS, BE, no. 224, 1 August 1987 (1987-08-01), pages 168-190, XP000560523 ISSN: 0251-0936

2. Novelty and Inventive Step

- PCT Articles 33 (2) and (3)

- 2.1 The present application does not comply with PCT Article 33(1) as the subject matter of claims 1 and 8 does not meet the requirement of novelty defined by PCT Article 33(2).

In the terminology of claim 1 of the present application, document D1 describes (the references between parentheses apply to this document):

A process for modulating a digital signal of frequency width  $L$  over a predetermined effective frequency band (page 1, lines 4-6), characterised in that it comprises the following steps:  
separating the digital signal into  $N$  blocks  $b_n$  (page 3, lines 1-2; figure 3),  
dividing the predetermined effective frequency band into  $N$  adjacent portions  $P_n$  (page 1, lines 4-6; figure 2),  
defining channels  $C_n$  of frequency width  $l_n$  comprised in an associated portion  $P_n$ , the channels  $C_n$  being separate (page 2, lines 23-24; figure 2 on the left),  
distributing each block of digital signals  $b_n$  on the associated channel  $C_n$  (page 3, line 3; figure 3).

The subject matter of claim 1 is therefore not novel (PCT Article 33(2)).

- 2.2 The same reasoning applies, mutatis mutandis, to the subject matter of claim 8.
- 2.3 The subject matter of claims 1 and 8 is also described in document D2, page 1, lines 27-36; page 2, lines 1-7; figures 1 and 2.
- 2.4 Dependent claims 2, 5-7, and claims 9-15 do not

contain any additional features which, in combination with the features of claim 1 and claim 8 respectively are novel or involve an inventive step.

The subject matter of claim 2 is described in document D1, page 2, lines 24-25.

The subject matter of claim 5 is described in document D2, page 1, lines 28-29 and figure 2.

The subject matter of claim 6 does not involve an inventive step, as separating the digital signal into  $N=2$  blocks constitutes a design choice which differs from the example in document D2, figure 2, only in that the number of blocks is  $N=2$  instead of  $N=4$ .

The subject matter of claim 7 does not involve an inventive step as the present application relates to the production of a multicarrier modulator, and the system defined here does not relate to properties or effects specific to transmission on the FM band.

The subject matter of claim 9 is described in document D1, page 3, lines 6-12 and figure 3.

The subject matter of claims 10-11 and 13-14 does not involve an inventive step, as the use of an error correction encoder and an interleaver in the transmitter, as well as the use of a decoder associated with the encoder and a de-interleaver associated with the interleaver, is standard practice in the field of multicarrier systems. See, for example, document D4, figure 14. The subject matter of claim 12 does not involve an inventive step, as the technical features defined therein, i.e. a multicarrier transmitter for a plurality of users, have already been used for the same purpose in document D3, figure 1.

The use of the transmitter and the receiver for transmitting digital signals in the FM band as defined in claim 15 does not involve an inventive step (see above).

3. Clarity - PCT Article 6

- 3.1 Furthermore, the application does not meet the requirements of PCT Article 6, because claims 1-15 are not clear.
- 3.2 Claim 4 does not meet the requirements of PCT Article 6, as the subject matter for which protection is sought is not defined. The claim is worded in such a way that its subject matter is defined by the result to be obtained. The wording used here is not acceptable, because it seems possible to define the claimed object in more specific terms, that is, by the way in which the result can be achieved.
- 3.3 The device claimed in claim 8 includes a method step in lines 9-10:  
*...implementing the process of any one of claims 1 to 7...*  
A system claim is considered to be a device claim, not a method or process claim. The systems must therefore be defined in terms of features of the device, not of steps in a method or process.
- 3.4 The following terms used in claims 1, 6, 8 and 12 are vague and ambiguous and leave doubt as to the meaning of the technical features to which they refer. The subject matter of said claims is therefore not clearly defined (PCT Article 6).

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**Claim 1, line 5; claim 8, line 8: *N block***  
"N block" or "N blocks"?

**Claim 6, line 1: *second block b<sub>1</sub>***  
Is the second block  $b_1$  or  $b_2$ ?

**Claim 12, line 2: *of the Q transmission chains***  
There is no prior mention of this subject matter.  
Q transmission chains have not previously been  
defined.

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